IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: James K. Falbo et al.   Atty. Dkt. No.: NTI-030

Assignee: Numerical Technologies, Inc.

Title: SHAPE-BASED GEOMETRY ENGINE TO PERFORM SMOOTHING AND OTHER LAYOUT BEAUTIFICATION OPERATIONS

Serial No.   10/040,055   File Date: 12/31/2001

Examiner: unknown   Art Unit: 2825

March 13, 2002

BOX NON-FEE AMENDMENT
ASSISTANT COMMISSIONER FOR PATENTS
Washington, D. C. 20231

PRELIMINARY AMENDMENT

Dear Sir:

Before taking action in this case, please amend the specification as indicated.

IN THE SPECIFICATION

Paragraph 0006 should be replaced with:

[0006]   Unfortunately, due to the complexity of modern IC layouts, detecting and correcting this type of layout imperfection (a technique sometimes referred to as "layout beautification") can be difficult. A method sometimes used to eliminate notch-type imperfections involves applying an oversizing/undersizing technique to entire polygons using a DRC tool. As indicated in Fig. 1d, each edge of polygon 100 is biased outward (oversized). As this biasing takes place, notch 111 formed by edges 102-104 shrinks and eventually disappears. The remaining edges can then be biased inward (undersized) to create a corrected (un-notched) polygon having the same overall dimensions as the original polygon 100.

1

Paragraph 0015 should be replaced with:

[0015]   Figs. 1a-1d show an example layout imperfection (notch) and a conventional method of correcting such a layout imperfection;

CONCLUSION

Paragraphs 0006 and 0015 of the written description have been amended. No new matter is added. The amendments remove references to certain superfluous figures that were eliminated by Applicants for reasons of clarity. The references themselves were inadvertently retained in the specification, even though the referenced figures were not included in the original filing. Therefore, Applicants respectfully submit that the described amendments merely clarify the original disclosure by eliminating reference to those figures that are no longer part of the application.

Attached is a marked-up version showing the amendments in a document entitled "VERSION WITH MARKINGS TO SHOW CHANGES MADE". If there are any questions, please telephone the undersigned at (408) 451-5907 to expedite prosecution of this case.

Respectfully submitted,

Customer No.: 29477

Jeanette S. Harms
Attorney for Applicant
Reg. No. 35,537

I hereby certify that this correspondence is being deposited with the United States Postal Service as FIRST CLASS MAIL in an envelope addressed to: Box Non-Fee Amendment, Assistant Commissioner for Patents, Washington, D.C., 20231, on March 13, 2002.

Date: 3/13/02   Signature: Rebecca A Baumann

VERSION WITH MARKINGS TO SHOW CHANGES MADE

[0006]   (Amended)   Unfortunately, due to the complexity of modern IC layouts, detecting and correcting this type of layout imperfection (a technique sometimes referred to as "layout beautification") can be difficult. A method sometimes used to eliminate notch-type imperfections involves applying an oversizing/undersizing technique to entire polygons using a DRC tool. As indicated in Fig. 1d, each edge of polygon 100 is biased outward (oversized). As this biasing takes place, notch 111 formed by edges 102-104 shrinks and eventually disappears. The remaining edges can then be biased inward (undersized) to create a corrected (un-notched) polygon having the same overall dimensions as the original polygon 100.[, as an intermediate polygon 150 is formed, as shown in Fig. 1e (the dashed outline of original polygon 100 is depicted for reference). Polygon 150 includes edges 106-109 forming a rectangle, with edge 109 replacing edges 101-105 in polygon 100. Each of edges 106-109 is then biased inward (undersized) by the same amount as the original outward bias to form a corrected polygon 160, shown in Fig. 1f.]

[0015]   (Amended)   Figs. 1a-1d[f] show an example layout imperfection (notch) and a conventional method of correcting such a layout imperfection;